PATENT APPLICATION
Q61045

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

#6
8/23/01
MW

In re application of

Fumiyoshi ONO

Appln. No.: 09/672,776

Confirmation No.: Not yet Assigned

Group Art Unit: 1765

Filed: September 29, 2000

Examiner: C. Brown

For: COMPOSITION FOR POLISHING METAL ON SEMICONDUCTOR WAFER AND METHOD OF USING SAME

RESPONSE

Commissioner for Patents
Washington, D.C. 20231

Sir:

This Response is submitted in response to the Office Action dated May 22, 2001, in which the Examiner set a three-month period for response.

Claims 6-9 are all the claims pending in the application.

On page 2-3 of the Office Action, the Examiner rejected claims 6-9 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Kasai et al. (U.S. Patent 6,007,592) and Streinz et al. (U.S. Patent 6,015,506).

Basically, the Examiner asserted that Kasai et al. discloses an alumina particle with an α-phase content of 80-90%, which reads on Applicant's "α-conversion rate of 65-90%". In addition, the Examiner has taken the position that since Streinz et al. discloses alumina particles having a surface area of 30 m^2/g to 100 m^2/g, the present invention is obvious.

Applicant respectfully traverses this rejection for the following reasons.

The present invention is directed to a method for polishing using a polishing composition comprising alumina fine particles containing or not containing aluminum hydrate, a polishing accelerator and water, said alumina fine particles having an α conversion ratio of from 65 to 90% and a specific surface area of from 30 to 80 m^2/g.

Applicant respectfully submits that a person of ordinary skill in the art would not arrive at the present invention based on Streinz et al. and Kasai et al. Specifically, Streinz et al. discloses the surface area of 30 to 100 m^2/g of an abrasive that is fumed alumina, which is mainly composed of γ-alumina. *See* col. 3, lines 62-63 of Streinz et al. and U.S. Patent 5,527,423 submitted herewith.

In contrast, Kasai et al. is directed to alumina with an α-phase content of 80-95%. Therefore, a person of ordinary skill in the art would not be motivated to combine Streinz et al. and Kasai et al. to use alumina with an α-content of 80-90% having a specific surface area of 30 m^2/g to 100 m^2/g because Streinz et al. is directed to fumed alumina comprising mostly γ-alumina and Kasai et al. is directed to alumina with an α-content of 80-95%. Accordingly, a person of ordinary skill in the art would not arrive at the present invention.

In addition, a person of ordinary skill in the art would not expect the advantages of the alumina particles with an α-conversion of 65%-90% and a specific surface area of 30 m^2/g to 80 m^2/g of the present invention.

In addition, Applicant submits herewith a Declaration under 37 C.F.R. § 1.132, which was filed in parent application no. 09/313,356, executed by Hajime Sato to demonstrate that the present invention provides unexpectedly superior results.

Applicant prepared compositions containing alumina particles where the

surface area and/or the α-conversion are outside the claimed ranges of 30 m^2/g to 80 m^2/g and 65%-90%, respectively. As shown in the Table of the Declaration, when the surface area of the alumina is less than 30 m^2/g or more than 80 m^2/g, or when the α-conversion is less than 65% or more than 90%, an increase in scratches, reduction in selection ratio and/or reduction in polishing rate were observed.

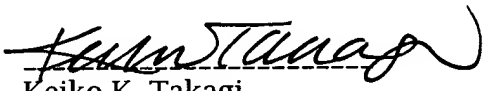
Accordingly, the present invention provides unexpectedly superior results.

Therefore, Applicant respectfully submits that Kasai et al. and Streinz et al. fail to teach or suggest the present invention, and respectfully requests that the rejection be withdrawn.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

Applicant hereby petitions for any extension of time which may be required to maintain the pendency of this case, and any required fee, except for the Issue Fee, for such extension is to be charged to Deposit Account No. 19-4880.

Respectfully submitted,



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